

USSR

UDC 51:155.001.57:681.3.06

DADAMYAN, G. G., DOMNIN, B. A., SEMENOV, A. I., TUPISYN, V. G., Modelir. Sets. Protsessov, Moscow, Nauka Press, 1970, pp 119-138.

is formalized, it is assumed that the selection of alternatives by an expert is determined by the preceding trajectory of a document and the induced hypothesis concerning the further path of documents in the organization. The structure of a graph illustrating the decision network is analyzed. The graph of the decision network is characterized by the following conditions: 1) each point connects to at least two lines (except for the root); 2) the "tree" should have no closed loops. This method of modeling of decision making processes is understandable and convenient. It must be noted that the use of decision networks produces only an indirect economic effect, in that it may lead to efficient arrangement and control of the organization being studied.

2/2

1/2 010 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--THERMOCATALYTIC ISOMERIZATION OF 1,FORMYL,2,3, DIPHENYLCYCLOPROPENE
AND ITS CORRESPONDING AZINE -U-
AUTHOR-(03)-KMOENDANTOV, M.I., KRYUCHKOVA, I.K., SHMIN, I.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970 6(3) 631-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMERIZATION, BENZENE DERIVATIVE, POLYNUCLEAR HYDROCARBON,
PROPYLENE, FURAN, PYRROLES, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1542

STEP NO--UR/0366/70/006/003/0531/0632

CIRC ACCESSION NO--AP0112536

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0112536

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. HEATING 1,FORMYL,2,3,DIPHENYL,2,
CYCLOPROPENE (I) WITH THE CATALYTIC AMT. OF CU STEARATE (II) AT
80DEGREES GAVE QUANT. YIELD OF 2,3,DIPHENYLFURAN. THE REACTION OF I
WITH H SUB2 NNH SUB2.H SUB2 D GAVE THE CORRESPONDING AZINE WHICH ON
HEATING WITH II ISOMERIZED TO 2,3,2 PRIME, 3 PRIME,TETRAPHENYL,N, N
PRIME,BIPYRROLE. A SIGMATROPIC MECHANISM (G. B. GILLE, 1968) IS
PROPOSED FOR THESE 2 ISOMERIZATIONS.

UNCLASSIFIED

USSR

UDC 621.375.018.756

ARAKCHEYEVA, I. A., DOMIN, L. P., YEREMIN, S. A., NIKISHIN, V. I., OSTAPENKO, G. S., PETROV, L. N., TRACHEV, A. I., UDOVIK, A. P.

"A Differential Amplifier"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrastysy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326704, Division H, filed 19 Jan 70, published 19 Jan 72, p 208

Translation: This Author's Certificate introduces a differential amplifier which contains two emitter-followers, two amplification stages with dynamic load and a common source of direct current. As a distinguishing feature of the patent, the amplification factor is increased and the thermal compensation is improved by basing the dynamic load on a reverse conductivity transistor, and by connecting in each branch of the amplifier a transistor of the same conductivity as that of the amplification stage, and a diode biased in the forward direction. The emitter of the amplification stage is connected to the DC source and to the emitter of the transistor with the same conductivity. The base of this transistor is connected through a diode to the center tap of the supply source, and the collector is connected to the base of the dynamic load transistor.

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USSR

UDC 577.1:615.7/9

DOMNIN, S. G., SOLOMINA, S. N., STARIKOVA, S. K.

"Comparison of the Danger of Coniosis from the Dust of Low-Grade Bauxites and Alunites"

V sb. Vopr. gigiyeny truda i prof. patol. v metallurgii (Problems of Industrial Hygiene and Occupational Diseases in Metallurgy--Collection of Works), Moscow, 1972, pp 126-131 (from RZh-Biologicheskaya Khimiya, No 17, Sep 73 (Abstract No 17 F1928))

Translation: The fibrosis-producing property of dusts (D) from alunite ore and bauxite low in silica (B) was studied in rats. The extent of development of fibrosis under the influence of alunite D was found to vary with their content of free SiO_2 . Fibrosis induced by low-grade bauxite D is scarcely distinguishable from experimental coniosis resulting from bauxite low in silica. The preliminary maximum permissible concentrations recommended for alunite dust, its concentrate, and low-grade bauxite dust are 2, 4, and 6 mg/m^3 , respectively.

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1/2 014
TITLE--AN ION EXCHANGER -U-

UNCLASSIFIED

PROCESSING DATE--13NOV70

AUTHOR--(05)-ILIN, V.A., SAMBORSKIY, I.V., GRACHEV, L.L., PASHKOV, A.B.,
DOMINA, L.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 231,800
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, CHEMICAL PATENT, POLYCONDENSATION,
POLYETHYLENE, POLYAMINE, RESORCINOL, HEXAMETHYLENETETRAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1442

STEP NO--UK/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128841

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128341

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. AN ION EXCHANGER WITH GREATER
CAPACITY FOR MOLYBDATE AND TUNGSTATE IONS IS PREPD. BY POLYCONDENSATION
OF POLYETHYLENE POLYAMINE, RESORCINOL, AND HEXAMETHYLENETETRAMINE.

UNCLASSIFIED

1/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--IGN EXCHANGER -U-

AUTHOR--(05)--ILIN, V.A., SAMBORSKIY, I.V., GRACHEV, L.L., PASHKOV, A.B.,
DOMNINA, L.A.
COUNTRY OF INFO--USSR

SOURCE--USSR 231,799
REFERENCE--GTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IGN EXCHANGE RESIN, CHEMICAL PATENT, TUNGSTATE, MOLYBDATE,
POLYETHYLENE, POLYAMINE, RESORCINOL, FORMALDEHYDE, ORGANIC SULFUR
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1455

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128854

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION EXCHANGER WITH IMPROVED
CAPACITY FOR MOLYBDATE AND TUNGSTATE IONS IS PREPD. BY POLYCONDENSATION
OF POLYETHYLENE POLYAMINES, RESORCINOL AND HCHO, AND CONTAINS
TETRAMETHYLTHIURAM DISULFIDE.

UNCLASSIFIED

USSR

UDC 547.785.5'791.8.07

SKVORTSOVA, G. G., DOMNINA, Ye. S., GLAZKOVA, N. P., and MAKHNO, L. P.,
Irkutsk Institute of Organic Chemistry, Siberian Branch Academy of Sciences
USSR

"The Interaction of N-Vinylazoles and N-Vinylindole With Halohydrins"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 73, pp 777-780

Abstract: The characteristics of the reaction of halohydrins (ethylene chlorohydrin, tetramethylene-1,4 chlorohydrin, 1-chloropropylene-2,3 -chlorohydrin, trimethylene-1,3 bromohydrin, ethylene fluorohydrin) with N-vinyl-imidazole (I), -benzimidazole (II), -benzotriazole (III), and -indole (IV) were studied. I and II reacted at the 3-position (at the N not bound to the vinyl group) with the formation of inner quaternary salts the halogen anion of which could be readily substituted with NO₃ and CNS in reactions with AgNO₃ and KCNS and the hydroxyl group with I in a reaction with HI. The vinyl group of I and II in the 1-N-position remained unchanged after the reaction with halohydrins. III reacted with the latter mainly over the vinyl group. The reaction of IV proceeded with vinyl polymerization and simultaneous formation of a quaternary salt. Brightly colored polymers of varying composition formed in this reaction.

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USSR

UDC 547.785.5:541.67:543.422

SHOSTAKOVSKIY, M. F., GLAZKOVA, N. P., DOMTINA, YE. S., BELCUSOVA, L. V.,
and SKVORTSOVA, G. G., Irkutsk Institute of Organic Chemistry, Siberian Branch
of the Acad. Sc., USSR

"Reaction of N-Vinylimidazoles with Alkyl Halides"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, Jul 71, pp 958-960

Abstract: Conditions were studied for the reaction of N-vinylimidazole and N-vinylbenzimidazole with methyl iodide, ethyl, isopropyl, and butyl iodide and bromide, and with methylene chloride. The reaction occurs without a solvent, with a 2-3 fold excess of alkyl halide at reflux temperature, leading to the formation of quaternary salts. It was established that N-vinylimidazole is more reactive toward alkyl halides than N-vinylbenzimidazole, probably because of its higher basicity. Alkyl iodides react faster than alkyl bromides; alkyl chlorides are completely unreactive. Using quantum mechanical calculations it was shown that most of the π -electron charge was localized at the "pyridine" nitrogen atom.

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1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ADDITION OF MERCAPTANS TO N VINYL DERIVATIVES OF INDOLE AND
IMIDAZOLES -U-
AUTHOR-(04)-SKVORTSOVA, G.G., GLAZKOVA, N.P., DOMNINA, YE.S., VORONOV,
V.K.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 167-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MERCAPTAN, IMIDAZOLE, INDOLE, BENZIMIDAZOLE, MOLECULAR
STRUCTURE, NMR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1112 STEP NO--UR/0409/70/000/002/0167/0172
CIRC ACCESSION NO--AP0104510
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104510

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ETSH (1 G) AND 0.015 G AZOBISISOBUTYRONITRILE WAS ADDED TO 2.2 G N-VINYLINDOLE (I) WITH COOLING, AND THE MIXT. HEATED IN A SEALED TUBE UNDER N 18 HR AT 70DEGREES TO GIVE 72PERCENT N-BETA-ETHYLTHIO)ETHYLINDOLE, B SUB7 170-2DEGREES, D PRIME20 1.0897, N PRIME20 SUBD 1.6020). SIMILARLY, THE FOLLOWING COMPDs. WERE PREPD. (COMPD., PERCENT YIELD, B.P.-MM., N PRIME20 SUBD, AND D PRIME20 GIVEN): N-(BETA-ISOPROPYLTHIO)ETHYLINDOLE, 77, 161DEGREES-2, 1.5870, 1.0605; N-(BETA-TERT-BUTYLTHIO)ETHYLINDOLE, 65, 141-2DEGREES-1, 1.5770, 1.0325; N-(BETA-ETHYLTHIO)ETHYLIMIDIAZOLE, 74, 129DEGREES-1, 1.5350, 1.0863; N-(BETA-PROPYLTHIO)ETHYLIMIDAZOLE, 72, 145DEGREES-2, 1.5272, 1.0586; N-(BETA-BUTYLTHIO)ETHYLIMIDAZOLE, 94, 159DEGREES-2, 1.5218, 1.0377; N-(BETA-ETHYLTHIO)ETHYLBENZIMIDAZOLE, 38, 190-2DEGREES-2, 1.6010, 1.1409; AND N-(BETA-PROPYLTHIO)ETHYLBENZIMIDAZOLE, 42, 190-1DEGREES-1, 1.5885, 1.1162. SO SUB2 WAS PASSED INTO 2.37 G. N-VINYLMIDAZOLE AND 1.5 G ETSH WITH COOLING AND THE MIXT. HEATED 18 HR AT 80DEGREES TO GIVE 61PERCENT N-(ALPHA-ETHYLTHIO)ETHYLIMIDAZOLE, B SUB4 113-14DEGREES, D PRIME20 1.0766, N PRIME20 SUBD 1.5270. I AND N-VINYLBENZIMIDAZOLE DID NOT REACT WITH ETSH IN THE PRESENCE OF SO SUB2 OR P-MEC SUB6 H SUB4 SO SUB3 H AT 0-70DEGREES. THE STRUCTURES WERE PROVED BY NMR SPECTROSCOPY. R SUBF VALUES WERE GIVEN.

UNCLASSIFIED

USSR

UDC 621.52:541.185:66.097.4

DOMNITSKAYA, M.A., PERSHINA, YE.I., RUBASHKIN, B.I.

"Activation Of Palladium Membranes By Titanium Hydride With The Object Of Reducing The Temperature Of The Process Of Diffusion Cleaning Of Hydrogen"

V sb. Novyye v tekhn. poluprovodn. proiz-va (New Semiconductor Production Technology--Collection Of Works), Voronezh, Voronezh University, 1971, pp 89-93 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4448)

Translation: It is established that at a temperature of 60° C permeability of an activated membrane to hydrogen is five times lower than that of a nonactivated membrane at a temperature of 300° C. At a temperature of 17--70° C, a dual coating of a membrane of commercial palladium by titanium hydride, obtained by free deposition of a hydride layer with subsequent brazing and repeated hydrogenation, assures permeability to hydrogen commensurate with the permeability of commercial palladium at a temperature of 250--300° C. A decrease of the permeability to hydrogen during operation of the membrane for approximately three months does not exceed 22--25 percent from the initial value. 5 ref.A.F.

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USSR

UDC 621:382.002

RUBASHKIN, B.L., PERSHINA, YE.I., DOMNITSKAYA, M.A., ZAVALISHIN, A.A.

"Activation Of Palladium Filters For Cleaning Of Hydrogen"

Elektron. tekhnika. Nauch.-tekhn.sb. Tekhnol. i organiz. proiz-va (Electronics Technology. Scientific-Technical Collection. Technology And Organization Of Production), 1971, No 5(45), pp 81-85 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A123)

Translation: A procedure is developed for deposition of titanium hydride on palladium plates, with the object of assuring their hydrogen permeability at reduced temperatures. It is established that a positive effect gives the only method of deposition which assures a porous covering, with the thickness of the covering not affecting the performance of the membrane. 8 ref. A.F.

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DOMONTOVICH, YE. N.

WORKING ABILITY AND the ORGANIZATION of HANDWORK L.H.Dok.

31 Mar 71

108

PHYSIOLOGICAL

120. USM

DOMONTOVICH, YE. N., ZHODANOV, N. A., and GREGOROV, N. N. *Psychophysiological Investigation of the Dynamics of Capacity for Mental Work*. Moscow, Voprosy Psihologii, Vol. 6, Nov-Dec 70, pp 86-93

Abstract: Observations of subjects performing mental work indicate four definite stages of performance: 1) Learning the task; 2) Developing skill; 3) Steady performance; 4) Declining performance with fatigue. A definite correlation was found between the flow of blood to the brain and the stages of performance. Blood supply tends to increase as performance improves during the second stage, then levels off during the third stage and declines as fatigue sets in. In normal subjects the cerebrovasculature coefficient at both the front and rear portions of the brain increases throughout the first two stages of the task, during the stable period of work the values for the rear portion of the brain fall off, while those for the frontal portions remain steady at a high level. In patients at the first stage of hypertension the increase terminates abruptly through the period of improvement and remains stable thereafter; in patients with recent stage hypertension, approximately the same early improvement is noticed, but the blood supply at the rear of the brain

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53: Foreign Press Digest
31 Nov 71

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DOMONTOVICH, YE. N., et al., *Voprosy Psihologii*, Vol. 6, Nov-Dec 70, pp 86-93
tends to fall off halfway through the initial stage of work and remain at a low level thereafter. The percentage increase in normal subjects is about two percent, in hypertensive patients nine percent or less.

The authors draw the following conclusions.

1. Simultaneous investigation of psychological and physiological factors is a valuable tool in distinguishing different stages of intellectual activities.
2. The entire brain participates in intellectual work, but the "supremacy" of effort shifts over time. Initially it is associated with the visual cortex (the task performed in these experiments required the subjects to make frequent use of correspondence table between letters and numbers -- as the task progressed this correspondence tended to be memorized); later, as the task is "interiorized," this epicenter shifts to the frontal portions of the brain.
3. These tendencies are more clearly observed in healthy persons and are less evident in hypertensive patients.

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Steels

UDC 669.187.5

USSR

CHERNYAVSKAYA, S. G., KALININA, N. YE., SULIMENKO, A. V., and DOMORATSKIY, V.A.

"Cold Brittleness of 1Kh16N4B Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 1(79),
Jan/Feb 73, pp 38-39

Abstract: The critical brittleness temperature for 1Kh16N4B steel produced by electroslag melting was -100°C and -80°C in the longitudinal and transverse directions, respectively (rods 150 mm in diameter were studied). The critical brittleness temperature for the same type of steel produced by electric arc smelting was -80 and -60°C in the longitudinal and transverse directions, respectively. A decrease of the critical temperature in the first case by 20°C is attributed to a higher steel purity with respect to sulfur, phosphorus, and gases.

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USSR

UDC 621.357.1:669.713.72(088.8)

DOMRACHEV, B. P., YANKO, E. A.

"Device for Heating the Self-Igniting Anode of an Aluminum Electrolyzer"

USSR Author's Certificate No 313896, filed 27 Oct 69, published 24 Nov 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L348P)

Translation: A device for heating the self-igniting anode of an Al-electrolyzer including burners for burning the anode gases is distinguished by the fact that in order to improve the anode quality, reduce the losses of fluoride salts and reduce the gas in the atmosphere of the shop, the device is made in the form of flat sealed metal gas ducts installed on the outside of the end walls and corners of the anode jacket in its upper section.

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USSR

UDC 681.325

DOMBACHEV, F. G.

"A Device for Automatically Determining the Error of an Angle-Code Converter"

USSR Author's Certificate, Class G 08 c 25/04, No 339933 filed 12 Aug 70, published 19 July 72 (from RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3 A392 P)

Translation: A device is proposed for automatically determining the error of an angle-code converter. In the device the following units are connected in series: a stable frequency oscillator, pulse counter, first gate, adder, second gate, error recording circuit, first decoder, indicator circuit and series-connected constant speed drive, converter, code-to-binary converter, second decoder, flip-flop (with output connected to the second input of the first gate). To extend the range of error determination the converter contains an "OR" circuit, first delay circuit, third gate, second delay circuit, standard code memory circuit, and third delay circuit; the input of the OR circuit is connected to the output of the code-to-binary converter and the output is connected to the second input of the flip-flop and the inputs of the first and second delay circuits. The output of the first delay circuit is connected to the first input of the third gate, whose second input is connected to the output of the standard code memory circuit, while the output is connected to the second input

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USSR

DOMRACHEV, F. G., USSR Author's Certificate, Class G 08 c 25/04, No 339933,
filed 12 Aug 70

of the adder. The first output of the second delay circuit is connected to the second input of the second gate, while the second input is connected to the input of the third delay circuit, the output of which is connected to the first input of the flip-flop. One illustration.

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1/2 045 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--STRUCTURE OF EUROPIUM TETRAKIS BENZOYLACETONATE USABLE FOR
OBTAINING A LASER EFFECT -U-
AUTHOR--(05)--ARISTOV, A.V., MASLYUKOV, YU.S., GRYAZNOVA, M.I., DOMRACHEV,
G.A., ASLANEV, L.A.
CCOUNTRY OF INFO--USSR
SOURCE--TECH. EKSP. KHIM. 1970, 6(1), 61-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--EUROPIUM COMPOUND, LUMINESCENCE SPECTRUM, X RAY STUDY, COMPLEX
COMPOUND, LASER EFFECT
CENTRL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1176 STEP NO--UR/0379/70/006/001/0061/0066
CIRC ACCESSION NO--AP0128598
UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128598

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ET SUB2 NH SUB2 (EU(BZAC) SUB4) AND C SUB5 H SUB11 NH(EU(BZAC) SUB4), WHERE HBZAC EQUALS BENZOYLACETONE AND C SUB5 H SUB11 NH PRIME POSITIVE EQUALS PIPERIDINIUM, WERE SYNTHESIZED BY THE METHOD OF BHAAUMIK (1964) AND THEIR LUMINESCENCE SPECTRA WERE TAKEN AT 77DEGREESK. STRUCTURES OF THE COMPS. AND OF THE (EU(BZAC) SUB4) PRIME NEGATIVE ION WERE DETD. BY X RAY STRUCTURAL ANAL. SPLITTING OF THE GROUND STATE LEVEL FOR THE EU ION CORRESPONDS TO A C SUB2 SYMMETRY BUT IT MAY ALSO BE DUE TO THE C SUB4 SYMMETRY OF THE EUO SUB8 GROUP. BOTH COMPLEXES GIVE A STABLE LASER EFFECT AT 613 NM WHICH CORRESPONDS TO A TRANSFER FROM THE PRIME5 D SUB0 LEVEL TO THE X OR Y COMPONENT OF THE PRIME7 F SUB2 LEVEL SPLIT BY THE CRYST. FIELD OF C SUB2 OR C SUB4 SYMMETRY. FACILITY: MOSK. GUSUNIV., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0101484

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

4R0079

121652j Reactions of a series of organotin compounds with diethylamine. Kochetikhina, K. G.; Domrachev, G. A.; Razuvaev, G. A. (USSR). *Zh. Obshch. Khim.* 1970, 40(2), 327-9 (Russ). Heating R_4Sn with Et_2NH 6 hr at 400° gave the following % yields of RH, olefin, R_1 , H_2 , C_2H_4 , MeCN, and tar, resp. (from the indicated value of R): Et, 3.3, 0, 0.34, 0.13, 0.38, 0.21, 73.6; Pr, 2.7, 0.72, 0.1, 0.33, 0.53, 0.18, 68.1; Bu, 2.0, 1.54, trace, 0.37, 0.52, 0.12, 71.5; and iso- C_4H_9 , 1.89, 1.81, 0, 0.41, 0.55, 0.07, 73.5%. The main reaction direction is the cleavage of H from the amine to form RII and with increasing chain length of R the proportion of the disproportionation reaction of the resulting radicals increases, while the decompn. of the radicals in the presence of Et_2NH is inhibited. The change in the product proportion in the presence of Et_2NH during such pyrolysis of R_4Sn is ascribed to coordination of the amine on a Sn atom, which reduces the polar effect of Sn on the β -elimination reaction. G. M. Kosolapoff

REEL/FRAME
19851390

Acc. Nr:

AP0101483

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

UR 0079

121653k Reactions of tetracyclohexyltin. Razuvaev, G. A.; Domrachev, G. A.; Kochetikhina, K. G.; Goncharov, V. A. (USSR). *Zh. Obshch. Khim.* 1970, 40(2), 325-7 (Russ). Pyrolysis of $(C_6H_{11})_4Sn$ at 250° gave mainly cyclohexane and cyclohexene, metallic Sn, and H in 12% conversion; at 300° traces of methylcyclopentene and dicyclohexyl were also formed and some tar formation was obsd., while at 350° more cyclohexane and less cyclohexene were formed, the other product yields being comparable to those above. Reaction in the presence of Et_3NH gave more cyclohexane and less cyclohexene than were obtained without the added amine at 250°, but at 350° the yield of cyclohexane was lower and that of cyclohexene was higher than were obtained without the amine. Other product yields were comparable to those above. In the presence of $(CH_2OH)_2$ the yield of cyclohexane was raised, that of cyclohexene lowered considerably, and other product yields were comparable to those above, while some $(SnO_2CCH_2O)_n$ was also formed. Thus, the disproportionation of the free radical intermediates increases with the temp. rise, while the β -elimination reaction is inhibited by the higher temp. The effect of the added amine is ascribed to coordination of it with the β -H atom (with respect to the Sn atom) of the cyclohexyl group. Thus, donor reagents in reaction with this R_4Sn exhibit their nucleophilic nature in the 1st step, then react as acids or as bases.

G. M. Kosolapoff

REEL/FRAME

19851389

USSR

UDC: 8.74

DOMRACHEV, V. M., KAYGORODTSEV, G. I.

"Evaluating the Productivity of the Computer Complex of an Automatic Control Systems With Regard to the Effect of Intermittent Failures"

V sb. Vopr. tekhn. i inform. obespecheniya ASU (Problems of Hardware and Software for Automatic Control Systems—collection of works), Novosibirsk, 1971, pp 13-16 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V500)

[No abstract]

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USSR

UDC: 8.74

DOMRACHEV, V. M., KAYGORODTSEV, G. I., TERESHKO, Ye. P.

"Methods of Checking Information in Automatic Control Systems"

V sb. Vopr. tekhn. i inform. obespecheniya ASU (Problems of Hardware and Software for Automatic Control Systems--collection of works), Novosibirsk, 1971, pp 3-12 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V499)

[No abstract]

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USSR

UDC: 621.375

DOMRACHEV, V. N. and LOSSOVSKIY, V. A.

"R-C Amplifier With Inverse Feedback Through a Nonlinear Band Filter"

Leningrad, Priborostroyeniye, No 1, 1972, pp 10-12

Abstract: Forced oscillations in a circuit given in a book published in 1966 (A. M. Bonch-Bruyevich, Radioelektronika v eksperimental'noy fizike -- Electronics in Experimental Physics -- Moscow, izd-vo "Nauka") are analyzed in the present article. The Kirchhoff laws are written from the equivalent diagram of the amplifier circuit, and from them is derived a second-order differential equation in terms of the ratio of the instantaneous output voltage to E_m , where $E_m/2$ is the interpolation step from the Stirling formula. The experimental resonance curves of the amplifier are plotted for various amplitudes of the input voltage, from which it can be seen that the output voltage in the transition from one stable state to another is increased or decreased in jumps. This confirms theoretical results regarding the presence of a bistable zone. The authors, associated with the Kazan Aviation Institute, note that similar amplifiers with different slopes of the amplitude-frequency characteristic can be used as highly selective filters.

USSR

UDC: 621.372.061

DOMRACHEV, V. N., LOSISOVSKIY, V. A.

"A Double-T Nonlinear RC Filter"

Kiev, IVUZ: Radioelektronika, Vol 15, No 3, Mar 72, pp 338-342

Abstract: The circuits of passive and active double-T RC filters with series opposing voltage-variable capacitors are analyzed. An expression is found for the output voltage when a harmonic signal acts on the input, and the amplitude-frequency response is determined.

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USSR

UDC 621.374.33(088.8)

DOMRACHEV, V. N., ALEXSEYEV, G. I.

"An Amplitude Selector"

USSR Author's Certificate No 259149, Filed 29 Jul 68, Published 23 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G202 P)

Translation: This Author's Certificate introduces an amplitude selector which contains a comparison circuit consisting of two transistors of the same conductivity type with a common emitter load, and an additional transistor of the opposite conductivity type with its base connected directly to the collector of the output transistor in the comparison circuit. To provide two operating levels, the base of the output transistor in the comparison circuit is connected to the collector of the additional transistor through a parallel circuit consisting of a capacitor and diode, the anode of the diode being connected to the collector of the additional transistor.

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1/2 005 UNCLASSIFIED PROCESSING DATE--23OCT7C
TITLE--UNIFICATION AND STANDARDIZATION OF ELECTRIC DRIVE UNITS IN WHEELED
VEHICLES -U-
AUTHOR-(03)-DOMBROVSKIY, N.G., SIGODIN, V.V., SRIBNER, M.M.
COUNTRY OF INFO--USSR
SOURCE--STANDARTY I KACHESTVO, 1970, NR 5, PP 49-50
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--WHEELED VEHICLE TRANSMISSION, TECHNICAL STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1555

STEP NO--UR/0422/70/000/005/0049/0050

CIRC ACCESSION NO--AP0120334

UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120334

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DISCUSSES THE PROBLEM OF UNIFICATION AND UNITIZATION OF WHEELED VEHICLES DRIVEN THROUGH AN ELECTRICAL TRANSMISSION. STANDARDS ARE CITED WHICH SPECIFY THE PROSPECTIVE PROPERTIES OF, AND REQUIREMENTS TO, THE ELECTRIC DRIVES OF WHEELED VEHICLES. THESE STANDARDS ARE UNDER DEVELOPMENT AT THE ALL UNION RESEARCH INSTITUTE OF STANDARDIZATION IN ENGINEERING (VNIINMASH), ALL UNION RESEARCH INSTITUTE FOR CONTRACTOR'S MACHINERY (VNIISTROYDORMASH), AND THE MINISTRY OF ELECTROTECHNICAL INDUSTRY OF THE USSR. FACILITY: ALL UNION RESEARCH INSTITUTE OF STANDARDIZATION IN ENGINEERING (VNIIMASH), ALL UNION RESEARCH INSTITUTE FOR CONTRACTOR'S MACHINERY (VNIISTROYDORMASH), AND THE MINISTRY OF ELECTROTECHNICAL INDUSTRY OF THE USSR.

UNCLASSIFIED

USSR

UDC 575.24

DOMSHLAK, M. G., POMERANTSEVA, M. D., and RAMAYYA, L. K., Institute of General Genetics, Academy of Sciences USSR, Moscow

"Mutagenic Effect of Various Types of Radiation on Spermatogonia in Mice. V. The Mutagenic Effect of Single and Fractionated Irradiation with Fast Neutrons on Spermatogonia in Mice"

Moscow, Genetika, Vol 6, No 8, Aug 70, pp 79-85

Abstract: The mutagenic effect of 1.5 Mev neutrons on spermatogonia was studied in experiments in which male mice were irradiated with total doses of 100 and 216 rad. The frequency of reciprocal translocations (determined directly on the spermatogonia) and the frequency of dominant lethal mutations (determined on breeding the irradiated males with nonirradiated females) were used as criteria. The mutation yield was higher after fractional irradiation than after irradiation with a single dose. This effect was evident at both dose levels but was more pronounced for a total dose of 216 rad than for 100 rad. In irradiation with X-rays, an increase in the frequency of mutations μ on fractionation of the dose is observed at high doses only. After exposure to the full dose in a single irradiation, there was a higher rate of elimination of spermatogonial cells with an increased sensitivity to mutation. The results indicate the possibility of accumulating mutations by repeated irradiation with fractional doses.

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USSR

UDC 575.24

~~DOMSHIAX, N. G.~~, POMERANTSEVA, M. D., and RAMAYYA, L. K., Institute of General Genetics, Academy of Sciences USSR, Moscow

"Mutagenic Effect of Different Kinds of Radiation on the Germ Cells of Male Mice.
IV. Genetic Effect of Fast Neutrons"

Moscow, Genetika, Vol 6, No 7, Jul 70, pp 73-82

Abstract: The radiosensitivity of mouse germ cell chromosomes in various stages of spermatogenesis was studied. It was found that the postmeiotic stages are more sensitive to fast neutrons than the spermatogonia. The mutation rate-dose relationship in mature sperm was linear at doses ranging from 18 to 216 rad. In the spermatogonia, the nature of the relationship between the frequency of dominant lethals and the dose differed from that observed in the postmeiotic stages, where an increase in dose had little effect. The frequency of reciprocal translocations in the spermatogonia increased linearly with doses up to 72 rad. Higher doses did not increase the mutation rate, but at 216 rad the frequency of translocations decreased sharply. The differences between the stages of spermatogenesis with respect to genetic radiosensitivity are thus identical after exposure to fast neutrons and after X-ray irradiation. The relative genetic effectiveness (RGE) of fast neutrons was the same (about 4.5) for different types of genetic injuries, regardless of the stage of spermatogenesis.

USSR

UDC 669.1:539.216.2:621.785.3:538.65

LITVINTSEV, V. V., DOMYSHEV, V. A., and KAZAKOV, V. G., Irkutsk Pedagogical
Institute

"Influence of Annealing on the Magnetoelastic Characteristics of Iron-Nickel
Films"

Moscow, Fizika Metallov i Metallovedeniye, Vol 30, No 5, 1970, pp 1077-1079

Abstract: Results are presented of an investigation of the influence of annealing on saturation magnetostriction γ_s , the magnetoelastic parameter n , and the Young modulus E of films of compositions of about 20% Ni-Fe and about 50% Ni-Fe. Comparison of data for the two compositions before and after annealing indicates that the changes in magnetoelastic properties are determined by phase conversions.

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USSR

UDC 621.165-253.4

KOVAL', G. S., KISEL'MAN, L. A., KUZNETSOV, B. D., and DON, E. A.

"Vibration State of Rotors of the K-300-240 KhTGZ Turbogenerator Set"

Chelyabinsk, V sb. "Osvoeniye blokov moshchnost'yu 300 MWt na Ekibastuzsk. ugle" (Collection of Works-Assimilation of 300 MW Power Units Burning the Ekibastuz Region Coal), 1972, pp 99-104 (from Referativnyy Zhurnal-Teploenergetika, No 6, June 72, Abstract No 6C37)

Abstract: Work conducted at the present time for increasing the rigidity of the No 3, 4, 5. bearings of the K-300-240 KhTGZ Turbogenerator set will make it possible to improve substantially its vibration state by eliminating the resonance vibrations at about service speed and the coincidence of critical speeds of turbine rotors. Ways of further reduction of rotor vibration are associated with

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USSR

KOVAL', G.S., et al, Chelyabinsk, V sb. "Osvoyeniye blokov moshchnost'yu 300 Mvt na Ekibastuzsk. ugle" 1972, pp 99-104 (from Referativnyy Zhurnal-Teplo-energetika, No 6, June 72, Abstract No 6C37)

quality rotor balancing at service speed to be performed at the plant and with improvement in generator rotor construction technology, in particular, in removing their thermal instability and unequal rigidity. Maintenance work on electric power stations must be accompanied by a thorough dynamic balancing of rotors on balancers of pendulum type. When designing the foundations and pipe system it is necessary to consider the importance of securing the minimum thermal expansion inequality of foundation columns, for the purpose of stabilizing loads on the turbogenerator bearings. 3 figures, 2 references.

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USSR

UDC 621.165.251:534.1.001.5

RUNOV, B. T., ~~DON, E. A.~~, MEYEROVICH, L. B., SELYUGIN, B. S.,
and KOVAL', G. S.

"Vibration Condition of Bloc-Type Turbo-Units"

"Kotel'n. i turbin. ustanovki energ. blokov" (Boiler and Turbine Installations of Power Units) Moscow "Energiya", 1971, pp 192-201 (from Referativnyy Zhurnal-Turbostroyeniye, No 10, Oct 71, Abstract 10.49.46)

Abstract: It is suggested, on the basis of data from vibration studies carried out by the All-Union Institute of Heat Engineering im. F. E. Dzerzhinskiy, on more than 120 turbo-units with evaluation of vibration parameters, to use the effective value of vibration speed as a criterion for evaluating the state of vibration of a turbo-unit. In accordance with developed GOST project, evaluation of vibration should be made by the largest measured value of the effective vibration speed of a bearing in, accordance with the following scale: excellent - not higher than 1.8 mm/sec, good - not higher than 2.8 mm/sec, satisfactory - not higher than 4.5 mm/sec. 14 figures, 1 table.

Turbine & Engine Design

USSR

UDC: 621.165.53.62-752

DON, E. A., Engineer, SOLONETS, B. P., All-Union Heat-Engineering Institute

"Off-Center Imbalance and Vibration of High-Power Turbogenerator Shafts"

Moscow, Teploenergetika, No 5, May 73, pp 62-66

Abstract: Research is done on the operation of high-power turbogenerator shafts under working conditions. Vibration measurements were accompanied by simultaneous investigation of the actual eccentric displacements of the shaft due to thermal expansions of the base and support bearings after a cold start, and also due to the variation in vacuum and in the mass of the water in the condenser. The results show that with off-balance shafting of turbogenerators a change takes place in the static characteristics of the lubricating layer of the main bearings, which affects the frequencies and modes of the natural oscillations, as well as the amplitudes of forced oscillations. During operation of a turbogenerator the relative displacements of the main bearings should not cause a change of reactions by more than 40-60%. In the case of low-frequency vibrations, the additional restrictions of the manufacturer should be followed. In the case of rotation of non-coaxial shafts with flexible coupling the vibration spectrum shows

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USSR

DON, E. Z., SOLONETS, B. P., Teploenergetika, No 5, May 73, pp 62-66

an increase in the content of the harmonic component which is twice the rotational component; a slighter change is observed in the higher harmonics.

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USSR

UDC 621.791.763.1:51.001.57

PODOLA, N. V., Candidate of Technical Sciences, and DONCHENKO, N. A., Engineer, Institute of Electric Welding imeni Ye. o. Paton, Academy of Sciences Ukrainian SSR; and URSAT'YEV, A. A., Engineer, Institute of Cybernetics, Academy of Sciences Ukrainian SSR

"Mathematical Description of the Process of Resistance Spot Welding of Light Alloy Using Isomorphous Models"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 16-19

Abstract: A possible method of accomplishing weld joint quality control using mathematical models to develop simpler mathematical descriptions of the spot welding process for parts of varying thickness and construction is described using the spot welding of D16AT alloy with a thickness of 1-1.5 mm in the region of optimum parameters of the weld mode. Tables are given with welding parameters which are then used in statistical equations for isomorphous models to produce the optimum parameters for producing quality welds which allows the proper welding parameters to be determined for the welding of parts of differing thicknesses and design. Seven tables, two bibliographic references.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEHYDRATION AND DESALTING OF PETROLEUM EMULSIONS -U-

AUTHOR--(05)-BULSHEV, S.F., BASHENOV, YU.M., KRYLOV, O.A., BASHMAKOV, P.Y.;
DONCHENKO, N.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,794
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL-PATENT, SURFACTANT, PETROLEUM EMULSION, PETROLEUM
DESALTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0887

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132977

UNCLASSIFIED

- 2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0132977
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PETROLEUM EMULSIONS ARE DESALTED
AND DEHYDRATED, REDUCING CORROSION OF PETROLEUM EQUIPMENT, BY
INTRODUCING POLYETHYLENIMINE AS A SURFACTANT.

UNCLASSIFIED

Optics & Spectroscopy

USSR

DONCHENKO, V. A., ZUYEV, V. YE., KRASYUK, I. K., PAL'YANOV, P. A., PASHININ, P. P., PROKHOROV, A. M., KABANOV, M. V.

"Energy Attenuation of Supershort Pulses of Optical Emission by Dispersive Media"

Moscow, Pis'ma v ZhETF, Vol 18, No 4, 1973, pp 230-232

Abstract: Preliminary results are presented from direct measurements of one of the basic characteristics of a dispersive medium -- the attenuation coefficient -- on its interaction with a supershort pulse of optical emission. A decrease in attenuation of the supershort pulse by comparison with the case of emission which is continuous in time was detected experimentally. The results of measurements of the optical thickness of suspensions of polystyrene latexes and lycopodium spores are tabulated for continuous and pulsed emission. The observed "transparency" of the medium which is three times as great in the case of a laser pulse by comparison with continuous radiation is not connected with such effects as the thermal effect on the properties of the medium, the spectroscopic effect of saturation and self-focussing.

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USSR

UDC 621.373.826:53

DONCHENKO, V. A., KAEANOV, M. V. and PAL'YANOV, P. A.

"Scattering a Short Light Pulse in a Dispersive Medium"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 351-355 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10D389)

Translation: An experimental investigation is conducted on the effect of the time of interaction between the radiation and the scattering particles on the form of the optical signal passing through a hazy medium. Three forms of modeled media having well-known parameters were used: suspensions of club moss (*Lycopodium*) in water-alcohol solution, a solution of milk in water, and a suspension of polystyrene in water. The maximum optical thickness of the scattering media did not exceed 4.7. No distortions of the light pulse were detected in its passage through the dispersive medium. This permits the conclusion that the interaction time of the radiation and the scattering particles is no greater than $3 \cdot 10^{-9}$ seconds. A. K.

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USSR

UDC 621.373.826:550.3

ARSHINOV, Yu. F., DONCHENKO, V. A., ZUYEV, V. Ye., KOSTIN, V. V.,
and SAMOKHVALOV, I. V.

"Propagation of Laser Radiation for $\lambda = 2.36$ Microns in Artificial
Dispersing Media"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 157-161 (from
RZh--Radiotekhnika, No 10, 1972, Abstract 10D439)

Translation: Results are given of a study of the attenuation and
inverse scattering of the radiation from a laser using $\text{CaF}_2:\text{Dy}^{2+}$
($\lambda = 2.36\mu$) and Ne-He mixture ($\lambda = 0.63\mu$) in a medium simulating
some types of natural clouds, fogs, and wood smoke. Bibliography
of five. A. L.

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USSR

DONCHEV, T. (Chair of Differential Equations)

"Behavior of the Solution of a High-Order Elliptic Equation in Infinite Domains"

Moscow, Vestnik Moskovskogo Universiteta: Matematika, Mekhanika; September-October, 1971; pp 12-5

Abstract: The paper deals with theorems of the Phragmen-Lindelöf type for the solution of an elliptic equation of the form

$$P(x, D)u \equiv \sum_{|\alpha| \leq m} a_{\alpha}(x) D^{\alpha} u = 0, \quad (*)$$

$$D^{\alpha} = \frac{1}{i^{\alpha_1}} \frac{\partial^{\alpha_1}}{\partial x_1^{\alpha_1}} \cdots \frac{1}{i^{\alpha_n}} \frac{\partial^{\alpha_n}}{\partial x_n^{\alpha_n}},$$

where $P(x, D)$ is a uniformly elliptic operator defined in a domain $G \subset \mathbb{R}^n$; for $|\alpha| = \alpha_1 + \dots + \alpha_n = m$ $a_{\alpha}(x) \in C_1$ and for $|\alpha| \leq m-1$ the functions $a_{\alpha}(x)$ satisfy Hölder's condition and are bounded in G .

Two theorems of the Phragmen-Lindelöf type are proved for the equation (*) with bounded Cauchy data on the boundary ∂G for the case in which G is an infinite layer or of the cylindrical type and the equation (*) satisfies Hörmander's condition.

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USSR

UDC: 621.396.6-181.5

AGAKHANYAN, T. M., VASIL'YEV, A. S., GALITSKIY, V. V., DONCHUK, S. D.,
PETROV, G. V., SMOLKO, G. G.

"Hybrid Circuits Utilizing Thin-Film Distributed RC Structures"

V sb. Mikroelektronika. Vyp. 1 (Microelectronics. No 1--collection of
works), Moscow, Atomizdat, 1971, pp 31-62 (from RZh-Radiotekhnika, No 6,
Jun 71, Abstract No 6V185)

Translation: Results found in development of microelectronic circuits
utilizing thin-film distributed RC structures are taken as a basis for
analysis of the possibilities of constructing a number of amplifiers,
sine-wave generators and relaxation circuits in the form of hybrid micro-
circuits. A number of recommendations are given on making microcircuits.
Thirty-seven illustrations, bibliography of thirty-six titles. N. S.

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USSR

UDC: 621.375

DONCHUK, S. D.

"A Selective Amplifier Circuit Using Distributed RC Structures"

V sb. Mikroelektronika. Vyp. 1 (Microelectronics. No 1--collection of works), Moscow, Atomizdat, 1971, pp 97-101 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D16)

Translation: The proposed circuit, which can operate at supply voltages of 4-6 V, uses a mode of voltage transmission which requires relatively low impedances at the input of the null filter, and high impedances at its output. The null filter is connected in the base circuit. There are no isolating capacitances in the feedback loop, which contains two transistorized amplification stages. This makes the device more stable with respect to scatter of resistor values and transistor parameters. In addition to the overall negative feedback, localized current feedbacks are used. The device can be made in the form of a micromodule. Bibliography of six titles. M. S.

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1/2 011 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--DETERMINATION OF THE QUANTIZATION OF ELECTRICAL CONDUCTIVITY CURVES
DURING TRANSESTERIFICATION -U-
AUTHOR-(34)-DCNDE, G.D., KULAKOV, M.V., SEMENDUYEV, V.YE., FUZHENTSEVA,
Z.A.
COUNTRY OF INFO--USSR
SOURCE--LAKUKRASOCH. MATER. IZH PRIMEN. 1970, (2), 67-70
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ESTERIFICATION, ALKYD RESIN, ELECTRIC CONDUCTIVITY, CHEMICAL
PRODUCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FILCH NO-----FD70/605012/807 STEP NO--UR/C303/70/000/002/0057/0070
CIRC ACCESSION NO--AP0140247
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140247

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TERMINATION OF THE
TRANSEESTERIFICATION STEP IN THE MANUF. OF ALKYD RESINS IS INDICATED BY
THE APPEARANCE OF A MIN. ON THE PLOTS OF THE REACTION MIXT. ELEC.
RESISTANCE (R) VS. TIME. R WAS EXPRESSED AS A SERIES AND THE CONDITIONS
WERE DETD. THEORETICALLY, WHICH DET. UNIQUELY AT THE END OF THE
TRANSESTERIFICATION WHEN $DR \text{ OVER } DT \text{ EQUALS } 0$.

UNCLASSIFIED

USSR

UDC 539.1

GETSOV, L. B., DONDOSHANSKIY, V. K., Leningrad

"Method of Calculated Estimation of Heat Resistance of Turbine Blades and Experimental Checking of Estimates"

Kiev, Problemy Prochnosti, No 6, 1972, pp 102-105.

Abstract: This article studies a method for calculated estimation of the heat resistance of blades operating at high temperatures, based on the use of the deformation criterion of fatigue rupture and the theory of strengthening, modified as applicable to the conditions of sign-changing stresses and variable temperatures to which turbine blades are subjected.

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USSR

DONETS, G. A.

UDC: 519.1

"Some Remarks on the Function of the Number of Colorings of C_1 -Graphs"

Kiev, Teoriya optimal'n. resheniy--sbornik (Theory of Optimum Solutions--collection of works), 1972, pp 3-13 (from RZh-Kibernetika, No 5, May 73, abstract No 5V465 by L. Mel'nikov)

Translation: The concept of C_1 -graphs was introduced in the work RZhMat, 1972, 9V323. Using some results of this paper, the author proposes a new method of counting the number of colorings of C_1 -graphs.

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USSR

UDC 669.15'27-194

STROGANOV, A. I., PYL'NEV, Yu. A., CHERNYSHEV, E. Ya., KEYS, N. V., PAKULEVA, V. S., DONETS, I. D., KHOLODOV, Yu. A., and GERMELIN, F. A., Chelyabinsk Polytechnical Institute; Chelyabinsk Metallurgical Plant

"Tungsten Losses in the Production of High-Speed Steel"

Moscow, Metallurg, No 1, Jan 71, pp 21-23

Abstract: Data are presented on seven melts of R18, R12, and R6M3 high-speed steels, an analysis is made of tungsten electric steelmelting and forge conversion processes, and methods are presented for utilizing scrap of tungsten-bearing steels. From the study the following conclusions can be made: as the tungsten content in the steel is increased, its assimilation decreases. A decrease in the proportion of tungsten through the ferroalloys as well as a decrease in the consumption of oxygen for blowing facilitate a more complete assimilation of tungsten by the metal. A substantial portion of tungsten is lost with the scrap and reguli in the slag (0.34%), the emery dust, and scale during forging. A thorough extraction of tungsten from slag and scale is suggested. Means for reducing tungsten losses in the process of heating castings and ingots in the furnaces include

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USSR

STROGANOV, A. I., et al, Metallurg, No 1, Jan 71, pp 21-23

a nonoxidizing atmosphere, more rapid heating, and application of a protective coating to ingots prior to heating. To decrease decarburization and scale formation, the Chelyabinsk Metallurgical Plant has recently been using coatings comprising refractory clay (20%), M40 carborundum powder (6%), fine graphite (6%), commercial borax (3%), and liquid glass (65%).

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Epidemiology

USSR

UDC 616.988-002.151-036.2(470.61)

PERELATOV, V. D., VOSTOKOVA, K. K., BUTENKO, A. M., and DONETS, M. A., Rostov Scientific Research Institute of Medical Parasitology, Ministry of Health RSFSR; Institute of Poliomyelitis and Virus Encephalitides, Academy of Medical Sciences USSR

"Epidemiology of Crimean Hemorrhagic Fever. II. Characteristics of the Epidemiology of Crimean Hemorrhagic Fever in Belokalitvenskiy Rayon of Rostov Oblast'"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 6, Nov/Dec 72, pp 718-724

Abstract: A study carried out in 1970-71 in Belokalitvenskiy Rayon of Rostov Oblast' indicated a sporadic occurrence of human infections with Crimean hemorrhagic fever. The maximum incidence (80 cases) was observed in May 1971. Maintenance of a source of infection was associated with the grazing of cattle on wooded land; antibodies to the virus were present only in the blood of cattle that were driven out regularly to forested pastures. Strains of the virus were isolated from Rhipicephalus rossicus (the predominant Ixodid species) and Dermacenter marginatus ticks collected from cattle and hedgehogs in wooded regions. Hares inhabiting steppe regions and fields also functioned as hosts
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USSR

PERELATOV, V. D., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 6, Nov/Dec 72, pp 718-724

of infected ticks, but their importance as a source of transmission of the disease was less than that of forest-inhabiting small rodents. The majority of patients had been attacked by ticks in forests, shelter belts, and gardens. Milkmaids were infected during the milking of cows in forests or as a result of contact with cows that had been 1-1.5 hrs earlier in forests -- after expiration of this time, the ticks were firmly attached to the cows.

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USSR

UDC 615.31:547.493.015

DONETS, V. F., Chair of Pharmacology, Medical Institute, Donetsk

"Pharmacology of beta-(N-Piperidyl)-ethyl and Isopropyl Esters of Dialkylphosphoric Acids"

Moscow, Farmakologiya i Toksikologiya, Vol 33, No 3, May-Jun 70, pp 366-370

Abstract: The pharmacological activity of compounds
$$\text{H}_2\text{C} \begin{array}{l} \text{CH}_2\text{CH}_2 \backslash \\ \text{CH}_2\text{CH}_2 / \end{array} \text{N}(\text{R}_2)\text{CH}_2 - \text{C}(\text{R}_1)\text{HOP}(=\text{O})(\text{R})_2$$
 with $\text{R} = \text{Et}$, $\text{R}_1 = \text{Me}$ (DS-25); $\text{R} = \text{Pr}$, $\text{R}_1 = \text{Me}$ (DS-27); $\text{R} = \text{i-Pr}$, $\text{R}_1 = \text{Me}$ (DS-32); $\text{R} = \text{Bu}$, $\text{R}_1 = \text{Me}$ (DS-28); $\text{R} = \text{Pr}$, $\text{R}_1 = \text{H}$ (DS-51); $\text{R} = \text{Pr}$, $\text{R}_1 = \text{H}$ (DS-48); $\text{R} = \text{Bu}$, $\text{R}_1 = \text{H}$ (DS-50); and of the quaternary iodomethylates of DS-32 (DS-47) and DS-48 (DS-49) was studied. In experiments on rabbits, DS-32 and DS-48 had a mytotic effect and reduced the intraocular pressure. All of the compounds studied inhibited psueudochoolinesterase, of the blood serum, but had only a low activity as inhibitors of the true acetylcholinesterase of the brains. Because of their low capacity for inhibiting acetylcholinesterase, the compounds in question had a relatively low toxicity (DL_{50} 175.0 - 332.3 mg/kg for mice). All the compounds except DS-47 and DS-49 produced contraction of a smooth-muscle preparation from a rat stomach. This effect was

USSR

DONETS, V. F., Farmakologiya i Toksikologiya, Vol 33, No 3, May-Jun 70, pp 366-370

counteracted by atropine, but not by benzohexonium; i.e., the compounds exerted an m-cholinomimetic action on the cholinoreceptors. The compounds studied exhibited an n-cholinolytic activity at concentrations higher than those at which contraction of smooth muscles of the rat stomach was produced (3×10^{-7} - 3×10^{-4} vs. 3×10^{-7} M). At the higher concentrations, the compounds in question exhibited an effect opposite to that of acetylcholine in experiments on the rat stomach preparation. The n-cholinolytic activity increased with an increasing size of R, reaching a maximum at R = Bu.

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USSR

DONETSKIKH, V. I., and SOBOLEV, V. V.

"Optical Reflectance Spectra of $A^{II}B^{IV}C_2^V$ Group Compounds in the Region of Their Fundamental Absorption"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 1, 1973, pp 40-46

Abstract: A study was made of the reflectance spectra of seven crystals of the $A^{II}B^{IV}C_2^V$ group ($ZnSiAs_2$, $ZnGeAs_2$, $ZnSnAs_2$, $CdGeAs_2$, $CdSnAs_2$, $ZnSiP_2$, $ZnSnP_2$) in the 1.5-5.5-ev region at 293 and 77° K and in the 5-12.5-ev region at 293° K. The structure of the spectra was found to be much more complex than expected, in the form of 10-12 bands. General regularities were found in the variation in related transition energies as a function of the lattice parameter for crystals of the subgroup $Zn(Cd)B^{IV}As_2$ and $ZnB^{IV}P_2$, and the interband transitions were predicted for unstudied $CdSiAs_2$, $ZnGeP_2$, and

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DONETSKIKH, V. I., and SOBOLEV, V. V., Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 1, 1973, pp 40-46

$\text{CdBi}^{\text{IV}}\text{P}_2$ crystals. There was found to be good agreement between the authors' data and the results of known electroreflectance spectra in the number and position of peaks.

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USSR

UDC 546.682.535.232

SOBOLEV, V. V., and DONETSKIKH, V. I.

"Optical Properties of HgS, HgSe, HgTe in the Bandgap Absorption Region"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 3, 1971, pp 46-51

Abstract: The article, which is a paper presented at the Second All-Union Conference on the Physics and Chemistry of AllpVI Type Compounds (Uzhgorod, May 1969), studies the reflection spectra of cleavages (HgSe) and etched (HgTe) single crystals, as well as a red modification of HgS (large samples of the mineral cinnabar from Central Asia and China deposits) in the 1.5-5 ev region at 293 and 77° K and in the 5-12.5 ev region at 293° K. The spectra for trigonal HgS proved to be very complex in the 2-5 ev region, especially at 77° K. The nature of the HgSe and HgTe bands is discussed on the basis of known theoretical band calculations and established empirical regularities in the pattern of the dependence of reflection band position on lattice parameter. Values are predicted for the transitions for ρ -HgS. A scheme is suggested for the structure of the valence band and conduction band of mercury chalcogenides.

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USSR

SOBOLEV, V. V., and DONETSKIKH, V. I., Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 3, 1971, pp 46-51

The authors thank YU. V. POPOV and V. G. NAGORNIY for measurements in the 5-12.5 ev region, N. A. OZEROVA for providing specimens of the α -HgS minerals, and F. HERMAN and W. SCULER for reprints of their articles.

2/2

1/2 034 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF HEAT TREATMENT ON THE INTERNAL FRICTION OF MANGANESE ZINC
FERRITES -U-
AUTHOR--(03)-DONETS, A.M., POSTNIKOV, V.S., TURKOV, S.K.
COUNTRY OF INFO--USSR
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SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTERNAL FRICTION, MANGANESE COMPOUND, ZINC, FERRITE, METAL
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UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121546

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HEAT TREATMENT WAS STUDIED ON THE INTERNAL FRICTION OF MN-ZN FERRITES AT 300-600DEGREES. THE TEMP. CURVES HAVE A RELAXATION MAX. NEAR 500DEGREES AT A FREQUENCY OF 7-9 HZ. THE HEIGHT OF THE MAX. DEPENDS ON THE COMPN. OF THE FERRITES AND ON THE HEAT TREATMENT. MN PRIME3 POSITIVE AND CATION VACANCIES MAY BE RESPONSIBLE FOR THE MAX. THE RELAXATION PROCESS IS CONSIDERED TO BE THE RESULT OF THE REORIENTATION OF MN PRIME3 POSITIVE-VACANCY PAIRS IN THE OCTAHEDRAL POSITIONS. THE INTERNAL FRICTION DUE TO SUCH A MECHANISM WAS CALCD., AND IT WAS FOUND THAT THE RELAXATION TIME, FOR THE REORIENTATION OF THE ION VACANCY PAIRS, DEPENDS ON THE ORIENTATION OF THE CRYSTAL AND THE NATURE OF THE STRESSED STATE.

UNCLASSIFIED

Acc. Nr:

AP0052524

Abstracting Service:

CHEMICAL ABST. 5-7c

Ref. Code:

4R0459

101168c Synthesis and studies of aromatic-aliphatic polyamides containing ether bonds in the monomer unit. Kolesnikov, G. S.; Fedotova, O. Ya.; Donetskii, I. A.; Fokina, L. T. (Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 106-19 (Russ). The condensation of $\text{HO}_2\text{C}(\text{CH}_2)_x\text{ORO}(\text{CH}_2)_y\text{CO}_2\text{H}$ with $\text{H}_2\text{N}(\text{CH}_2)_z\text{NH}_2$ in 98% iso-PrOH or dioxane gave $-\text{O}_2\text{C}(\text{CH}_2)_x\text{ORO}(\text{CH}_2)_y\text{CO}_2^--\text{H}_2\text{N}(\text{CH}_2)_z\text{NH}_3^+$ (I). These salts were neutral in alc. solns. and were easily hydrolyzed. Heating I at 130-320° during 3-5 hr in vacuo or Ar gave 69-97% $[\text{OC}(\text{CH}_2)_x\text{ORO}(\text{CH}_2)_y\text{CONH}(\text{CH}_2)_z\text{NH}]_n$ (II) (R, x, y given): 1,4- C_6H_4 , 6, 2; 1,4- C_6H_4 , 6, 6; 1,4- C_6H_4 , 6, 10; 1,3- C_6H_4 , 6, 10; 1,3- C_6H_4 , 6, 6; 1,3- C_6H_4 , 6, 10; 1,3- C_6H_4 , 6, 2; 4,4'- $\text{C}_6\text{H}_4\text{C}_6\text{H}_4$, 6, 2; 4,4'- $\text{C}_6\text{H}_4\text{C}_6\text{H}_4$, 6, 6; 4,4'- $\text{C}_6\text{H}_4\text{C}_6\text{H}_4$, 6, 10; 4,4'-isopropylidenediphenylene (III), 4, 2; III, 6, 2; III, 8, 2; III, 10, 2; III, 4, 6; III, 6, 6; III, 8, 6; III, 10, 6; III, 6, 10. The optimum prepn. conditions of I and II were established. All II had high surface hardness, formed elastic fibers from their melts, were insol. in common org. solvents, and stable $\leq 300^\circ$ in the air. CPJR

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19821167

DONIGEVICH, M. I.

SO: JPRS 53402
12 JUN 71

UDC: 618.2-082(571.66)

THE ROLE OF THE OBSTETRICS DEPARTMENT AT THE OBLAST HOSPITAL IN IMPROVING
OBSTETRICAL CARE FOR INHABITANTS OF KAMCHATSKAYA OBLAST

(Article by M.I. Donigevich, candidate of medical sciences, and A.N. Novikova,
Kamchatskaya Oblast Department of public health (headed by N.S. Kolesnikov,
and obstetrics department (headed by A.S. Novikova) of Kamchatskaya Oblast
Hospital (Chief physician: P.D. Pyatunov); Moscow, Sovetskoye Zdravookhran-
eniye, Russia, No 5, 1971, submitted in November 1970, pp 29-31)

The present stage of development of obstetrical care in our country
is characterized by an increase in deliveries of rural residents at oblast
and central rayon hospitals and decrease in deliveries in rural district
hospitals or using the beds of field-obstetrical centers. This is
related to the rise in economic and cultural standard of living for the
rural population, better railway system, development of transportation
(including aviation), better qualification of medical workers, and better
quality of diagnosis of complications during pregnancy.

This also applies to Kamchatskaya Oblast, in spite of its vast terri-
tory and great distance of populated settlements from oblast and rayon centers
(see Table).

Of particular importance is hospitalization in the oblast and rayon
hospitals from rural areas and workers' settlements for pregnant women with
a poor obstetrical history and complicated course of pregnancy, with respect
to skilled and, in a number of cases, specialized medical aid during
delivery. The obstetrical departments of oblast hospitals play an important
part in this, as the centers for highly skilled obstetrical aid in an oblast.
In addition to organizational methodological, emergency and scheduled con-
sultations in obstetrics, the population of oblast regions receives aid in
these departments in the presence of the most complicated obstetrical and
extragenital pathology, pathological deliveries are performed as well as
surgical procedures at a qualitatively higher level.

To execute the order of the USSR Minister of Health, No 200 dated
19 August 1969, "On measures for further improving the quality of medical aid
to pregnant women, before, during and after delivery" the Kamchatskaya Oblast
Department of public health has conducted a number of measures directed toward

USSR

UDC: 8.74

DONIN, A. B., SKINDER, B. I.

"An Effective Method of Organizing Data Blocks in an Automated Control System"

Kiev, Avtomatiz. sistemy upr. proizvod--sbornik (Automated Production Control Systems--collection of works), 1972, pp 12-22 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V628 by V. Mikheyev)

Translation: A method of effective arrangement of data block structure is proposed which is based on the following approach. The processing of data blocks in automated control systems involves the necessity of intensive utilization of external computer storage devices. In this connection expenditures of machine time depend to a great extent on the makeup of the requisites entering the data blocks. The process of selecting an optimum version of data block composition is usually a combinatorial problem whose realization is considerably complicated by the large number of variants which arise in this case. It is proposed that the variants be partially sorted with a solution on each step which is improved in comparison with the preceding cycle. A solution of the

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USSR

DOMIN, A. B., SKINDER, B. I., Avtomatiz. sistemy upr. proiz-vom, 1972, pp 12-22

problem is understood to mean a process of handling data blocks to produce some output document or message based on some set of requisites occurring in the given data block and fixed for the given problem. Formation of a data block is understood to mean the process of choosing from the entire set those requisites carried on primary media or entering from terminal devices and intended for machine processing of some fixed group which comprises the given block in accordance with certain considerations, and recording them in the external computer storage in standard format. The accuracy of the information is computer checked.

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USSR

UDC: 51

DONIN, L. D., POPOVA, L. P., KHOTYAKOV, M. A.

"Development of an Algorithm for Solving one of the Problems of Compiling an Operational Schedule for Intraplant Deliveries of Material Resources"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Devices and Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp. 27, pp 57-62 (from RZh-Matematika, No 9, Sep 73, abstract No 9V595 by the authors)

Translation: The paper points out the failures of the existing method of providing material resources to the subdivisions of an industrial enterprise. A method is suggested for compiling an operational schedule of cargo deliveries for the plan period. The stages of compilation of the schedule are described, and an algorithm is worked out for solving the problem of one of the stages.

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USSR

UDC: 621.315.592

GERASIMENKO, N. N., DONINA, V. I., LEZHEYKO, L. V., SIROCHINSKIY, S. E., and SMIRNOV, L. S., Institute of Semiconductor Physics, Novosibirsk

"Irradiation of Diamond Crystals by Protons"

Leningrad, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1489-1494

Abstract: An investigation is made of the effects of irradiating diamond crystals with protons, plus subsequent annealing, on the characteristics of the crystal, and an explanation is given of the reactions of the specimens by considering the peculiarities of the disorder region and the consequent compensation of conductivity. Changes in the electrical conductivity and cathode luminescence spectra of the diamonds when proton-irradiated and annealed were recorded. The problem of finding the laws governing the behavior of the diamonds under such treatment was solved by comparing the data obtained after irradiation by both protons and electrons since irradiation by electrons permits definite assumptions regarding defects resulting in electrical conduction and cathode luminescence spectrum changes. Three types of crystal were investigated: Natural, types Ia and IIa; synthetic nonconducting crystals;

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GERASIMENKO, N. N., et al, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1489-1494

synthetic p-type semiconductor crystals alloyed with B, Al, and Ti during growth. The authors acknowledge the assistance of V. V. Bolotov for his useful comments, Ye. V. Sobolev for offering the natural diamond crystals, and of V. I. Abramenko, S. A. Sokolov, V. A. Patrenin, and Yu. M. Limasov for irradiating the crystals.

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Simulations

USSR

UDC: None

BIBUKOV, Yu. A., DONOV, V. G., and IVASHCHENKO, V. G.

"Device for Modeling the Neuron"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 14, 1973, p 149, No 373737

Abstract: This device, which contains an integrating circuit and thyristors, has a control electrode for the first thyristor connected with the integrator, a second thyristor being joined to the anode of the first. The function of this control electrode is to expand the class of problems capable of solution.

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USSR

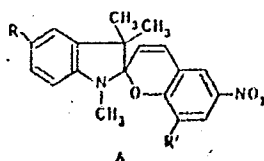
UDC 547.752.754'814.5:541.127'651

PANTSYRNYI, V. I., GAL'EINSHTEIN, M. A., and DONSKAYA, N. A., All-Union Scientific Research Institute of Organic Polymer Products and Dyes

"Effect of Groups at the 5 and the 8' Positions on the Rate of the Dark Decoloration Reaction of Colored Solutions of 1,3,3'-Trimethylspiro [indolin-2,2'-]2H-1 benzopyranes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, 5, May 1973, pp 653-658

Abstract: The reaction rates of thirty-five spiropyrans having the general form



were measured. The R and R' (the 5 and 8') groups were a variety of alkyls, alkoxy, acids, esters, and halides. A detailed statistical analysis of the kinetics curve at 10° in toluene established that the decoloration reaction

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USSR

PARTSYRNYI, V. I., et al., Khimiya Geterotsiklicheskikh Soyedineniy, 5,
May 1973, pp 653-658

can be satisfactorily described as first order. The effects of various experimental conditions were determined. The experimental data on the effect of the 5 and 8' groups were analyzed by multifactor analysis. The differences in rates could not be correlated with parameters describing the electronic effect of R and R'.

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USSR

UDC 661.12:661.183.12

DONSKAYA, N. G., MIKHALEV, A. V., and LIBINSON, G. S., All Union Scientific Research Institute of Antibiotics, Moscow

"Study of the Relationship between the Structure and Sorption Characteristics of Ion Exchange Resins Used in Chemical-Pharmaceutical Industry"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 10, Oct 71, pp 43-48

Abstract: A study was carried out on the effect of ion exchange resin characteristics, such as the type of matrix or functional groups on the selectivity of sorption. As far as the functional groups were concerned -- whether they were on the resin or on the experimental material -- the amine substituent groups had no effect whatsoever; when the sulfo groups were replaced by carboxy groups, however, the selectivity was lowered considerably. Absorption of aromatic compounds by an ion exchange resin is mostly due to van der Waals's type of interactions between the sorbent and sorbate. Therefore, the selectivity of aromatic compounds should increase in the order of the following matrix type: aliphatic-phenyl-naphtyl. Experimental data showed that selectivity indeed does increase going from an aliphatic matrix sorbent to a phenyl matrix; the selectivity of phenyl and naphtyl matrices, however, is identical.

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USSR

UDC 771.531.37.778.33

BOGDANOV, L. M., GRECHKO, M. K., DONSKAYA, S. A., ZHORRES, V. I.,
KISLITSYN, V. K., and NEFEDCHENKOV, V. M., Shostinskiy Branch, Gosniikhimfoto-
proyekt Shostinskiy Chemical Combine

"A New X-Ray Film for Rapid Machine Processing"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii, Vol 18, No 4, 1973, pp 306-
307

Abstract: The Shostinskiy branch of the Gosniikhimfotoprojekt and the Shostin-
skiy Chemical Combine completed in 1972 the development of a new medical X-ray
film, the RM-1 "M" which, in distinction from the series-produced RM-1 medical
X-ray film, is suitable for rapid machine processing. The specifications of
this new film are similar to those of the East German Supervidox Roentgen
Film/x-ray. The emulsion layer of the RM-1 "M" film is thinner than that of
the RM-1 film, and of the RM-1T film that is being produced in series for
tropical use; the emulsion layer of the new film is capable of withstanding
the severe temperature conditions of machine processing. During machine pro-
cessing, each of the operations of developing, fixing, washing, and drying
require 45 seconds. The RM-1 "M" film has been tested for machine processing
with entirely satisfactory results, and is now being produced in series.
2 tablos. 2 references.

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USSR

UDC 771.531.37:778.33

BOGOMOLOV, K. S., DONSKAYA, S. A., All-Union State Scientific Research and Design Institute of the Photographic Chemical Industry, Shostkinskiy Affiliate

"Effect of Silver Iodide on the Properties of Coarse-Grained X-Ray Emulsions"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 18, No 3, May/Jun 73, pp 161-162

Abstract: Experimental data are given from an investigation of the influence of silver iodide on the photographic and granulometric properties of coarse-grained x-ray emulsions. The emulsions were exposed on the RUP-200 x-ray camera and processed in three different developers: x-ray (total), surface, and subsurface (Stevens). It was found that: 1) x-ray sensitivity is independent of the silver iodide concentration for given constant emulsion grain sizes; 2) the latent image formed in emulsions containing iodide is mainly a subsurface image which is poorly developed by a developer of the surface type.

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Organophosphorus Compounds

USSR

UDC 541.6:547.1'118

RAYEVSKIY, O. A., DONSKAYA, Yu. A., KHALITOV, F. G., and ANTOKHINA, L. A.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov Academy
of Sciences USSR

"Conformation of Dialkyl(aryl)cyanomethylphosphine Oxides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 73,
pp 1339-1341

Abstract: IR spectra of Methylcyanomethylphosphine oxide and diphenylcyanomethylphosphine oxide show that in solutions these compounds exist in an equilibrium of two conformers. Under conditions of higher concentrations, considerable association of molecules is noted. The dipole moments of these compounds in gauche conformation, exhibiting the polar grouping P=O and C=N, are considerably below the calculated values obtained from the vector analysis, because of Coulomb interaction.

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USSR

UDC 543.422.4:541.57:547.1'118

RAYEVSKIY, O. A., DONSKAYA, YU. A., ANTOKHINA, L. A.

"Infrared Spectra and Internal Rotation With Respect to the P-N Bond of Some N-Arylamidodichlorophosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2497-2501

Abstract: A study was made of the infrared spectra of compounds with the general formula $H(RC_6H_5)NP(O)Cl_2$ where $R = p-OCH_3$ (I), H(II), p-Br (III) and p- NO_2 (IV). According to the infrared spectral data for solutions of N-(p-methoxyphenyl)amidodichlorophosphate and N-phenylamidodichlorophosphate, conformational equilibrium is characteristic at the same time as for N-(p-Br-phenyl)amidodichlorophosphate and N-(p- NO_2 -phenyl)amidodichlorophosphate, one steric structure is stabilized. It is proposed that the forms with shielding of the PO and NH bonds and their skew mutual arrangement participate in the equilibrium. The observed variations in the displacement of the conformational equilibrium as a function of the nature of the substitutions in the p-position of the benzene ring are explained by a different degree of conjugation of the nitrogen atom with the phosphorus part of the molecules.

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USSR

UDC 541.124:547.1'118

RAYEVSKIY, O. A., DONSKAYA, YU. A.

"Intramolecular Interactions in Phosphoryl Compounds"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973,
pp 2494-2497

Abstract: On the basis of the principle of incomplete equalization of the electronegativities, the charges on the atoms and groups of a number of phosphoryl molecules were calculated. The data obtained were compared with the experimental material on the H-bond energies with phenol.

For the OC_2H_5 , OC_6H_5 and $\text{N}(\text{CH}_3)_2$ substitutions, a significant role of the resonance effect on the electron density of the phosphoryl oxygen is characteristic. The conjugation is appreciably less for Cl and C_6H_5 . Within the limits of error of the calculation and the experiment there is no resonance component for the SC_2H_5 and SC_6H_5 groups. The nature of variation of the dipole moments of the phosphoryl grouping under the effect of both the induction and resonance interactions of the substitutions is estimated.

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USSR

UDC 539.183.4+541.6:547.1'118

RAYEVSKIY, O. A., AKAMIN, V. D., KHALITOV, F. G., DOMSKAYA, YU. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the USSR Academy of Sciences

"Dipole Moments and Conformations of Some Phosphorus Thioacid Derivatives"

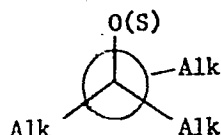
Moscow, Izvestiya Akademii Nauk SSR -- Seriya Khimicheskaya, No 11, 1972, pp 2451-2454

Abstract: Results have been presented previously from conformational investigation of systems containing the P-O bond (O. A. Ratevskiy, et al., Izv. AN SSSSR, Ser. khim., 1725, 1970; O. A. Ratevskiy, et al., Izv. AN SSSSR. Ser. khim., 2177, 1971; O. A. Rayevskiy, et al., Izv. AN SSSSR. Ser. khim., 348 1972). Identification of the conformers and analysis of the factors causing energy stability of the conformers made it possible to evaluate the role of such interactions as the van der Waal's and Coulomb forces and the mutual orientation of the bonds. An analogous study has now been made of systems containing the P-S bond and the results are compared with the previous studies of the P-O bond. The dipole moments were measured for the propyl ester of diethylthiolphosphonic acid (I), the propyl ester of diethyldithiophosphonic acid (II), the dichloranhydride of methylthiolphosphoric acid (III) and the dichloranhydride of methylthiophosphoric acid (IV). A version of gosh-trans
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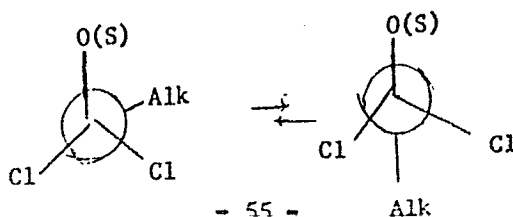
USSR

RAYEVSKIY, O. A., et al., Izvestiya Akademii Nauk SSR-- Seriya Khimicheskaya, No 11, 1972, pp 2451-2454

equilibrium was established for compounds (III) and (IV). The population of conformers in the nonpolar environment is 0.8 gosh and 0.2 trans. No clear spectral signs of isomer equilibrium were observed for compounds (I) and (II). The similarity of the experimental values of the dipole moments of these compounds calculated for the gosh-form indicates that this form is stabilized. These data indicate the energy advantage of the gosh-conformer in the case of alkyl



substitutions on phosphorus and realization of the thermodynamic equilibrium of the gosh and trans-form for the dichloranhydrides. With respect to the



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RAYEVSKIY, O. A., et al., Izvestiya Akademii Nauk SSR — Seriya Khimicheskaya, No 11, 1972, pp 2451-2454

types of conformations there is a defined analogy with the systems containing the P-O bond. The difference in position of the conformational equilibria for the compounds with the alkoxyl and alkthiol groups is explained by the variations and intermolecular interactions. A quantitative evaluation of the factors affecting the stabilization of the transformers indicates a decrease in the resonance component in the alkthiol group by comparison with the alkoxyl group.

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USSR

UDC 541.6:547.1'118

RAYEVSKIY, O. A., KHALITOV, F. G., DONSKAYA, YU. A., and SHERMERGORN, I. M.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov Acad. Sc. USSR

"On the Conformations of Certain Chloromethylthiophosphinic Acid Chlorides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 795-800

Abstract: Results are reported on the study of spacial structures of the compounds with the general formula $RCIP(S)CH_2Cl$ where $R = Cl, C_2H_5, C_6H_5, p-ClC_6H_4,$ and CH_2Cl using IR spectroscopical and dipole moment methods. In solutions these compounds exist in an equilibrium of two conformers, one of which has the trans orientation of the P:S and C-Cl bonds. Analysis of intramolecular interactions has been carried out and related to the stabilization of the resulting spacial structures. It has been noted that replacement of a phosphoryl oxygen atom by an atom of sulfur has practically no effect on intramolecular interactions.

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Organophosphorus Compounds

USSR

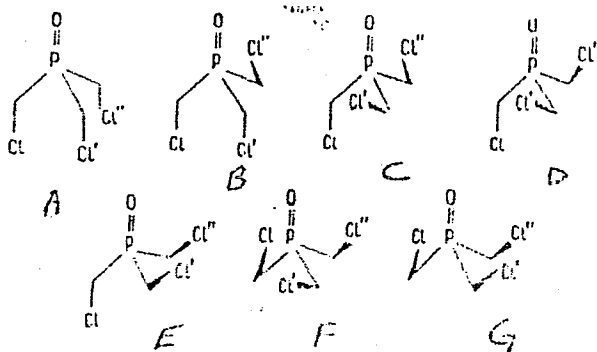
UDC 541.6:541.127.4:547.1'118

RAYEVSKIY, O. A., VERESHCHAGIN, A. N., KHALITOV, F. G., and DONSKAYA, YU. A.,
Institute for Organic and Physical Chemistry imeni A. YE. ARBUZOV, Academy
of Sciences USSR

"Analysis of Conformational Equilibrium of Tris(chloromethyl)-phosphine Oxide"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972,
pp 710-712

Abstract: The following conformations are possible:



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USSR

RAYEVSKIY, O. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 710-712

The IR spectra, dipole moments (D.M.) and Kerr constants (K.C.) can provide information on the conformational equilibrium and the actual forms present. The D. M., in μ , and K.C., in $K \times 10^{12}$, values for the above forms from thermodynamic calculations are as follows: A, 1.19 and 45; B, 2.23 and 58; C, 4.16 and 63; D, 4.12 and 38; E, 5.07 and 375; F, 6.07 and -528; and F, 6.59 and -206. The measured values are 2.34 and -55, indicating a mixture of conformers. The forms C, D, and E may be eliminated due to their D.M. and K.C. values. The probable equilibria are $A \rightleftharpoons B$ and $F \rightleftharpoons G$. The equilibria $A, B \rightleftharpoons F, G$ are unlikely on the basis not only of the closest fit to experimental and calculated parameters but also of theoretical calculations. Form F, in which all the C-Cl bonds are directed toward one side has the least steric hindrance. The considerable influence of the electrostatic interaction is indicated in that A is the most stable form. In A, the $P = 0$ and C - Cl dipoles are oriented antiparallel.

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Magnesium

USSR

UDC 669.721.472(088.8)

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SHARUNOVA, G. M., KASHKAROV, A. Z., DONSKIKH, P. A., KOLESNIKOV, A. V., GOLUBEV, A. A., SPRYGIN, A. I., KOLESNIKOV, V. A., and KUZ'MIN, V. V., All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry, and Berezniki Titanium-Magnesium Combine, .

"Device for Conveying Liquid Electrolyte and Magnesium"

USSR Authors' Certificate No 259396, Cl. 40c, 3/02; 40c, 3/08, (C 22d), filed 21 Oct 68, published 28 Apr 70 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 G250 P)

Translation: In order to utilize the heat of the exothermic reactions taking place during the mixing of reversible electrolyte with $MgCl_2$ and to preclude the consumption of electric energy for heating the main conveyer lines, a pipeline for conveying the reversible electrolyte and metallic magnesium was installed inside a trough-shaped channel to convey a magnesium chloride-enriched electrolyte, the pipeline being connected at one end with the last electrolyzer of the flow line, and at the other with a mixer, while the trough-shaped channel is connected with the lead electrolyzer and the mixer.

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1/2 016 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--CHOICE OF FURNACE FOR MELTING METALLIC SILICON -U-
AUTHOR-(02)-DONSKOY, A.V., PARFANOVICH, B.V. D
COUNTRY OF INFO--USSR
SOURCE--TSVET. METALLY JAN. 1970, (1) 47-49
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SILICON, METAL MELTING, BIBLIOGRAPHY, METALLURGIC FURNACE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1916 STEP NO--UR/0136/70/000/001/0047/0049
CIRC ACCESSION NO--AP0109245
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECHNOLOGICAL PROBLEMS ARISING IN THE CHOICE OF FURNACE FOR THE PRODUCTION OF METALLIC SI ARE DISCUSSED ON THE BASIS OF EXISTING DATA DRAWN FROM A NUMBER OF COUNTRIES. SOME WORKING FORMULAE INDICATING THE OPTIMUM CONDITIONS FOR THE PRODUCTION OF SI IN STANDARD FURNACES ARE PRESENTED; THESE FORMULAE GIVE THE RATE OF GAS EXTRACTION AND THE OPTIMUM GAS TEMP. FOR SPECIFIED CHARGE COMPOSITIONS. 8 REF.

UNCLASSIFIED

USSR

UDC: 621.317.757(088.8)

PAVLYUK, A. P., MIKHAYLOV, V. A., MININ, V. A., TARASOV, N. S., DONSKOY, M. K.

"A Device for Measuring the Bandwidth of Radio Frequency Signals"

USSR Author's Certificate No 255403; filed 4 Apr 68, published 31 Mar 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A324 P)

Translation: It is pointed out that existing devices for measuring bandwidth have a number of disadvantages: a lack of continuous visual monitoring of the spectrum of the emission being studied, inadequate precision, and poor operational efficacy. The purpose of the proposed invention is to automate measurements and improve precision. A block diagram of the device is given and its operating principle is described. E. L.

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1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ABSORPTION CROSS SECTIONS OF 25 GEV-C ANTIDEUTERONS IN LI, C, AL,
CU AND PB -U-
AUTHOR--(03)-BINON, F., DENISOV, S.P., DONSKOV, S.V. D
COUNTRY OF INFO--USSR
SOURCE--PHYS. LETT.: 31B: 230-2(16 FEB 1970)
DATE PUBLISHED--16FEB70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CAPTURE CROSS SECTION, ANTIPARTICLE, DEUTERON BOMBARDMENT,
PION, ANTIPROTON, LITHIUM, CARBON, ALUMINUM, COPPER, LEAD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1982/0678 STEP NO--NE/0000/70/031/000/0230/0232
CIRC ACCESSION NO--AP0052137
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0052137

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABSORPTION CROSS SECTIONS WERE MEASURED FOR THE INTERACTION OF ANTIDEUTERONS IN LITHIUM, CARBON, ALUMINUM, COPPER, AND LEAD TARGETS AT 25 GEV-C, USING THE STANDARD TRANSMISSION TECHNIQUE. SIMILAR MEASUREMENTS WERE ALSO MADE FOR PIONS AND ANTIPROTONS. THE COMPARISON OF THE VARIOUS ABSORPTION CROSS SECTIONS SHOWS THAT NUCLEI ARE BLACK FOR BAR P AND BAR D BUT THAT THE VALUES ARE MUCH LARGER FOR BAR D THAN FOR BAR P. FACILITY: INST. FOR HIGH ENERGY PHYSICS, SERPUKHOV, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--VULCANIZATION OF UNSATURATED RUBBERS -U-
AUTHOR--(04)-DOGADKIN, B.A., DCNTSOV, A.A., LUBACHEVA, G.K., VERSHININA,
N.M.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 267,062
REFERENCE--GTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--VULCANIZATION, RUBBER, PYRIDINE, IODINATED ORGANIC COMPOUND,
PATENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1411 STEP NO--UK/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0128810
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128810

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A VULCANIZING AGENT, SUCH AS ALLYLPYRIDINIUM IODIDE, WAS USED TO VULCANIZE UNSATD. RUBBERS IN THE PRESENCE OF RADICAL INITIATORS. FACILITY: LOMONOSOV, M. V., INSTITUTE OF FINE CHEMICAL TECHNOLOGY, MOSCOW.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--VULCANIZATION OF RUBBERS WITH SORBIC ACID SALTS -U-
AUTHOR--(05)-ZAKHAROVA, YE.S., MIKHLIN, V.E., DONTSOV, A.A., MARKOV, V.V.,
DUGADKIN, B.A.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA, 1970, 29(3), 46
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--VULCANIZATION, PEROXIDE, ORGANOCALCIUM COMPOUND, ORGANONICKEL
COMPOUND, STYRENE, SYNTHETIC RUBBER, VULCANIZATE/(U)SKS30ARK STYRENE
RUBBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0833 STEP NO--UR/0138/70/029/003/0046/0046
CIRC ACCESSION NO--AP0124500
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SKS 30 ARK RUBBER WAS VULCANIZED
IN THE PRESENCE OF 10 PARTS (MECH:CHCH:CHCO SUB2) SUB2 CA OR
(MECH:CHCH:CHCO SUB2) SUB2 NI AND VARIOUS PEROXIDES. THE VULCANIZATES
WITH SUPERIOR PHYSIOMECH. PROPERTIES WERE OBTAINED. FACILITY:
MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 620.193.01"669.29

ANDREYEVA, V. V., GLUKHOVA, A. I., ~~DOMTSOV, S. N.~~, MOISEYEVA, I. S., and
MEL'NIKOVA, L. V., Institute of Physical Chemistry, Academy of Sciences USSR

"Corrosion Resistance and Electrochemical and Mechanical Properties of Ternary
Nb-Ti-Ta and Nb-Ti-Cr Alloys"

Moscow, Zashchita Metallov, No 4, 1972, pp 415-419

Abstract: Binary alloys of Nb-Ta are highly resistant to solutions of strong acids. These alloys are quite promising for the manufacture of important parts of chemical apparatus. It was assumed that the presence of tantalum in binary Nb-Ti alloys should increase their corrosion resistance without reducing mechanical and technological characteristics. An experimental study was therefore made of the influence of the individual elements on the corrosion resistance and electrochemical and mechanical properties of certain ternary niobium-based alloys with titanium, tantalum, and chromium. The corrosion resistance of Nb-Ti-Ta alloys in solutions of sulfuric and hydrochloric acid at 100°C decreases with increasing titanium content, with tantalum content remaining constant. The addition of 1 to 5% chromium to niobium has no influence on its resistance to these acids, but reduces workability in the hot and cold states. Addition of chromium to Nb-Ti alloys can produce alloys with good technological properties. The chromium significantly increases the
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USSR

ANDREYEVA, V. V., et al., Zashchita Metallov, No 4, 1972, pp 415-419

strength characteristics at high temperatures. Addition of chromium also increases the hardness of case alloys. Dendritic liquation occurs in alloys containing 30 and 40% Ti and 4-5% Cr. Addition of up to 5% chromium to Nb-Ti alloys does not worsen acid resistance, but increases mechanical characteristics.

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USSR

UDC 669.293.5.294.018.8.669.018.2

DONTSOV, S. N., MOISEYEVA, I. S., MEL'NIKOVA, L. V., GLUKHOVA, A. I., ANDREYEVA, V. V., ALESHINA, L. V., STRIZHEVSKAYA, L. G.

"Influence of Technological Factors on Corrosion Resistance and Mechanical Properties of Niobium-Tantalum Alloys"

Nauchn. Tr. N-i. i Proyekt. In-t Redkomet. Prom-sti [Scientific Works of Scientific Research and Planning Institute for the Rare Metals Industry], 1971, Vol. 32, pp. 152-160. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 1736 by the authors).

Translation: Influence of technological factors on the corrosion resistance of Nb-Ta alloys is studied. 4 figs; 5 biblio refs.

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USSR

UDC 669.293.5'295'71:669.018.2:620.193.41

ANDREYEVA, V. V., ALEKSEYEVA, Ye. L., DONTSOV, S. N., and MOISEYEVA, I. S.

"Corrosion of Alloys of the Niobium-Titanium-Aluminum System"

V sb. Korroziya i zashchita met. (Metal Corrosion and Protection -- Collection of Works), Moscow, "Nauka," 1970, pp 49-54 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1825 by the authors)

Translation: The article considers the mechanical properties, as well as the corrosion resistance of alloys of the Nb-Ti-Al system in 20% HCl and 40-75% H₂SO₄ at 40 and 100°. The authors present potentiostatic current-density/potential and corrosion-rate/potential curves taken in 75% H₂SO₄ at 140° using alloys with varying Ti and Al content. The corrosion resistance of the alloys is exponentially dependent on their atomic content of alloy components (Ti, Al), with Al most intensely affecting the deterioration of corrosion resistance. Three illustrations. Two tables. Bibliography of five titles.

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